It's About Real Time

5.8GHz Day-Night All Weather Camera Series

Manual Rev-A

OWNER'S MANUAL

VideoComm Technologies – "The Freedom of Wireless"
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SAFETY NOTICES

I. **THIS DEVICE COMPLIES WITH FCC RULES PART 15. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITONS:**

(1) This device may not cause harmful interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device

II. **In order to comply with the FCC/IC adopted RF exposure requirements, this transmission system will be installed by an authorized professional installer of VideoComm Technologies. Installation of all antennas must be performed in a manner that will provide at least 23cm clearance from the front radiating aperture, to any user or member of the public.**

III. **This is NOT an intrinsically safe device. Do not take into area where intrinsic safety is required. Bodily harm may result if warning is ignored.**

IV. **DO NOT OPERATE CAMERA WITHOUT ANTENNA CONNECTED TO ANTENNA PORT. Failure to do so will result in damage to the unit and void the warranty.**

V. **DO NOT OPERATE THE SYSTEM WHEN the Camera & Receiver are closer than ten feet to each other. The devices may not work properly and permanent damage can occur.**

VI. **This device has been certified by the FCC for use with other products without any further certification (as per FCC section 2.1091.) Changes or modifications not expressly approved by VideoComm Technologies could void the user's authority to operate the equipment.**

Industrie Canada Industry Canada 0336

FCC ID SU5-T5808 Industry Canada 3677A-T5808VCT

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INTRODUCTION

Introduction

Easy to install and operate, the all-weather 5.8GHz IR camera series offers an economical solution for Real-Time, high-resolution wireless video applications that is not susceptible to interference from 2.4GHz 802.11 b/g networks. The unit features 8 user-selectable channels, high-resolution day-night color CCD camera and powerful IR illuminators for night vision. Perfect for permanent or temporary outdoor monitoring applications where trenching cable may not be possible, convenient or economical.

Advantages

- Easy to install and operate.
- 5.8GHz - 8 user selectable channels.
- High resolution Sony CCD camera chip
- Delivers high resolution, real time video
- Night vision range up to 100 feet (model # ZX-520SR100)
- Less susceptible to wireless data networks and other devices
- Rugged all weather IP-66 rated protective metal enclosure.
- Includes universal wall-ceiling mounting bracket
- Perfect for commercial, industrial, scientific, law enforcement
- and government video security applications.

Model # ZX—520SR100

VideoComm Technologies
Customer Service

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Web Site- www.VideoTransmitters.com
Monday - Friday 8:30am- 5:30pm
Eastern Standard Time

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PARTS LIST

The 5.8GHz All Weather Camera Series has been carefully manufactured, tested, inspected and packaged. Please inspect the packaging carefully to ensure you have received all the necessary parts and accessories listed. Refer to the following chart to determine which parts are included with your product. If any parts are missing or damaged, contact **VideoComm Technologies,** Customer Service or your re-seller immediately.

PARTS	ZX-520SR100
1 X All Weather Camera with Sun-Hood	**X**
1 X Universal Mounting Bracket	**X**
1 X 12 VDC 500mA Power Supply – # PS-1250	**-**
1 X 12 VDC 1.25 Amp Power Supply – # PS-121A	**X**
1 X 5.8GHz Rubber Duck Antenna – # RUB-5803	**X**
1 x Allen-Key	**X**
Operating Instructions	**X**

PRE INSTALLATION

Site Evaluation

Identify line-of-sight

Although wireless video transmission may seem like a viable option for a particular application at first glance, there are many considerations. Is there a clear, unobstructed view between the transmitter and receiver? Are there any other devices that may cause interference? Depending on the height of the building, tower or structure, you must consider the path that the wireless video will travel between the transmitter and receiver. Line-of –sight is defined as a clear and unobstructed view between the transmitter and receiver.

Up & in the clear

To realize the optimum distance for your VideoComm Technologies wireless devices, “give them some air”. A good rule of thumb is to mount the devices at least 15 to 20 feet above obstructions, like the roof of a building, above the roofs of parked cars in a parking lot, or top of a fence line.
See Figure 2.

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Ground Plane

If the radio devices are not mounted high enough above obstructions, the signal strength will be seriously reduced; therefore your distance will be reduced. The signal will literately bounce up and away from your intended target. This is known as a negative ground plane effect. The ground plane could not only be the ground you stand on, but could also be the rooftops of cars or distant buildings. ***See Figure 3***. If we have a choice, place the transmitter/receiver enclosures, or if external antenna, on the edge of the roof looking AWAY from the building, rather than installing them in the middle of the roof , shooting across the top of the roof. ***See Figure 4***. This is particularly important if we have a metal roof that tends to deflect signals away from the target. Also consider any obstruction that may get in the way, like another roof or a tractor-trailer that may pass through your "line of sight"..

Trees Grow!

If we install the video link in the winter, the leaves that come out in spring may eliminate your wireless link. Are you trying to transmit through trees? Then you will need to seriously consider how much range will be lost. A field test is always the best way to find out. Speak to a VideoComm Technologies Tech for a possible solution.

Unusual Traffic

Watch out for unusual traffic in your transmission path. For example, a dump truck with the back elevated while dumping a load can be much taller than expected. Tractor-trailers or other large vehicles may be a factor if trying to transmit over a highway. Metal obstructions between the antennas cannot be ignored including electrical transmission lines that may not be obvious in the distance. Each high voltage wire crossing your path can be the equivalent of transmitting past an eight-foot thick steel pipe. Microwave towers may look fragile, but they can be as good as or equal to a solid steel door for blocking transmission.. The higher the transmitter and receiver are in the air, the higher the success rate.

Things that block transmission

Things that block transmission are not always obvious. Here are some of the most common pitfalls:

- Water, or anything with water in it (people are 98% water). Snow & rain can reduce your distance.
- Steel, or anything with steel in it---steel-reinforced concrete (rebar) or metal window screens, or a tool-room cage. Aluminum siding, and energy-saving foil on the insulation in the walls are sneaky killers for radio waves. Some metallic paints or metallic wallpapers also block signals.
- Mirrors block transmission, because the "mirror" consists of a metallic backing on the glass.
- Lead windows will kill radio transmission; also windows that are UV coated may have thin metal energy-saving film.
- High Voltage transmission lines (physically they look small, but for video transmission purposes, they might as well be 8-foot diameter metal sewer pipes.
- Other materials like brick, drywall or wood, will also cut down on the signal, depending on water content.

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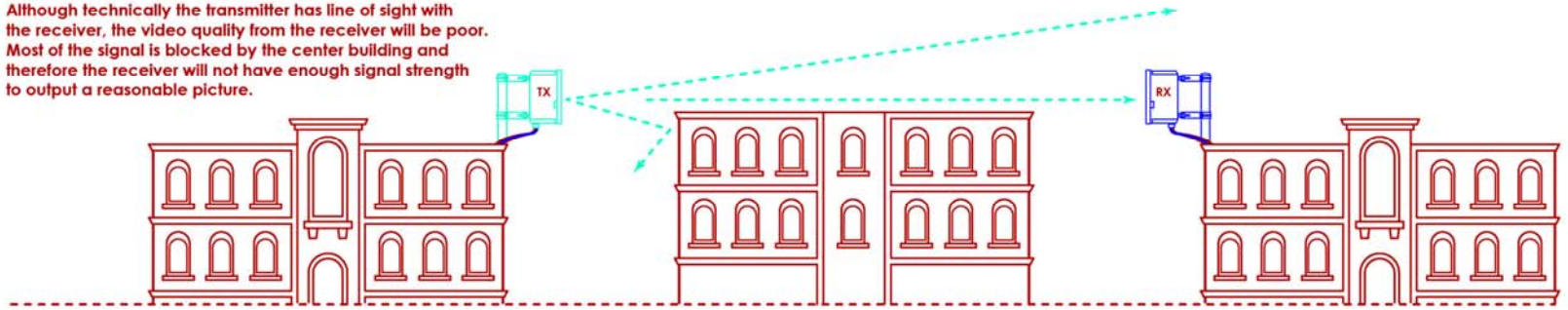
PROBLEM:

Although technically the transmitter has line of sight with the receiver, the video quality from the receiver will be poor. Most of the signal is blocked by the center building and therefore the receiver will not have enough signal strength to output a reasonable picture.

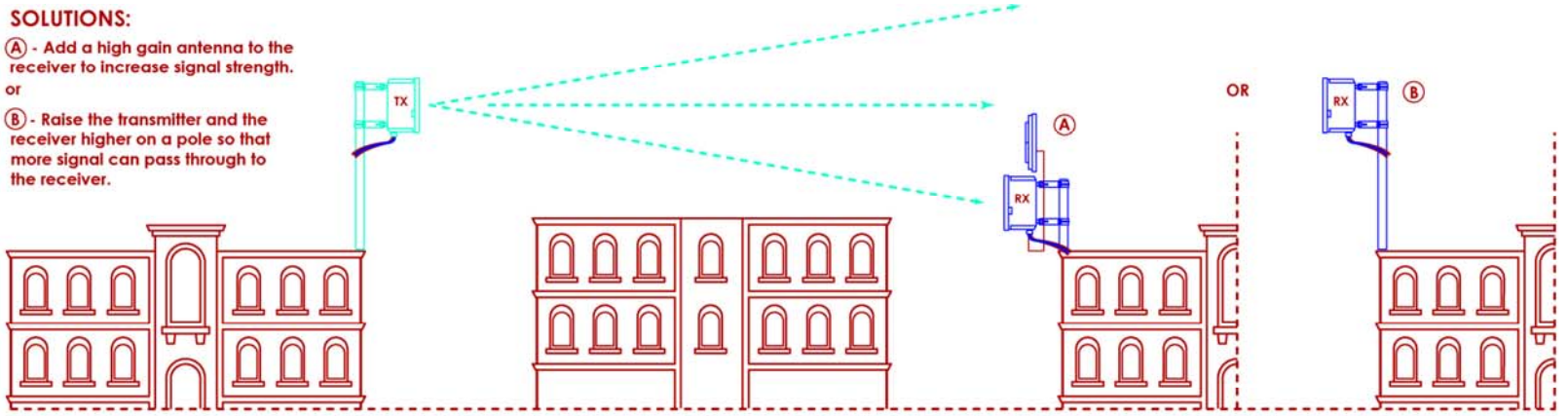


SOLUTIONS:

Ⓐ - Add a high gain antenna to the receiver to increase signal strength.

or

Ⓑ - Raise the transmitter and the receiver higher on a pole so that more signal can pass through to the receiver.



OBSTRUCTED - LINE OF SIGHT

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VIDEOCOMM TECHNOLOGIES

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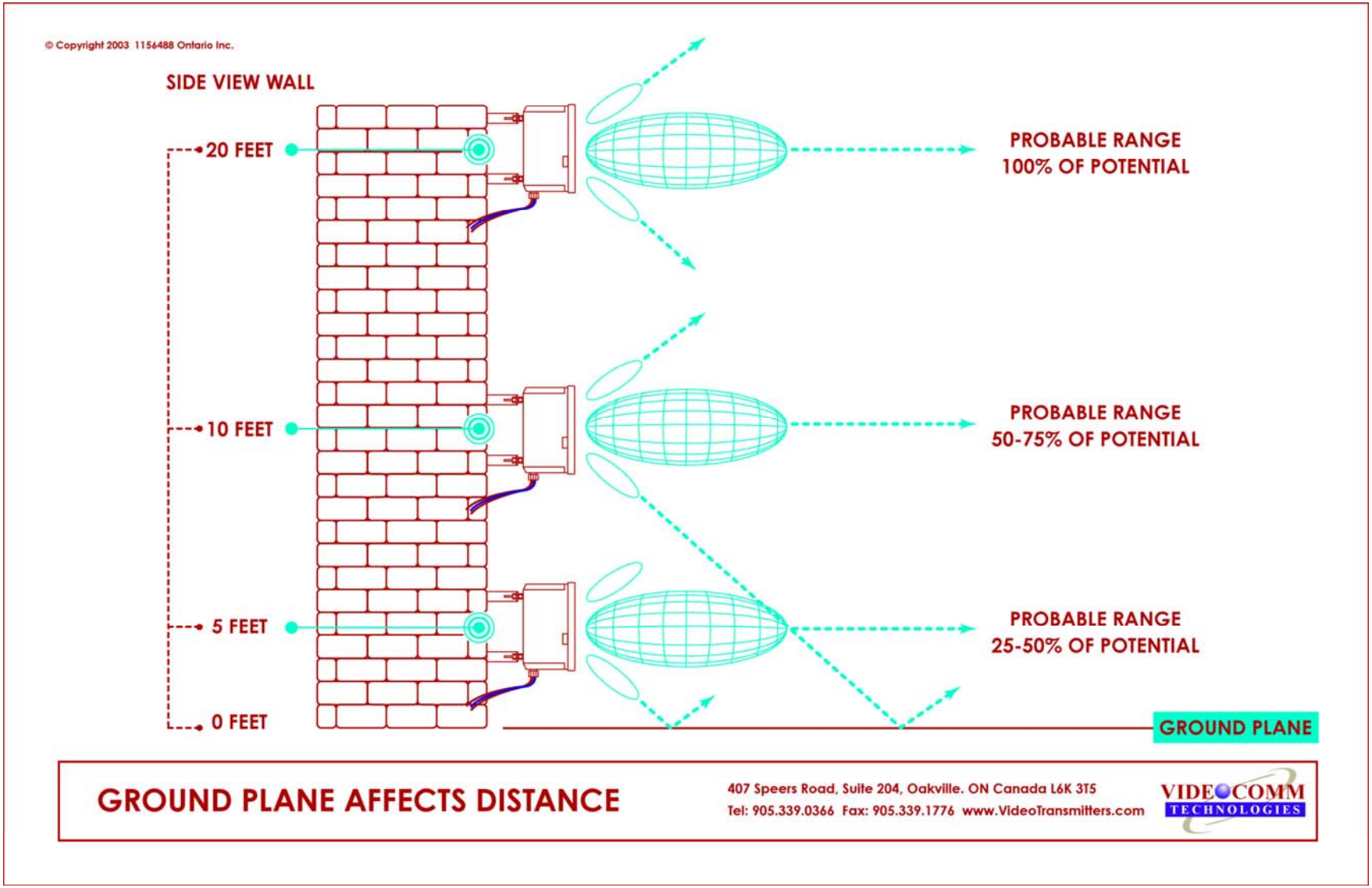

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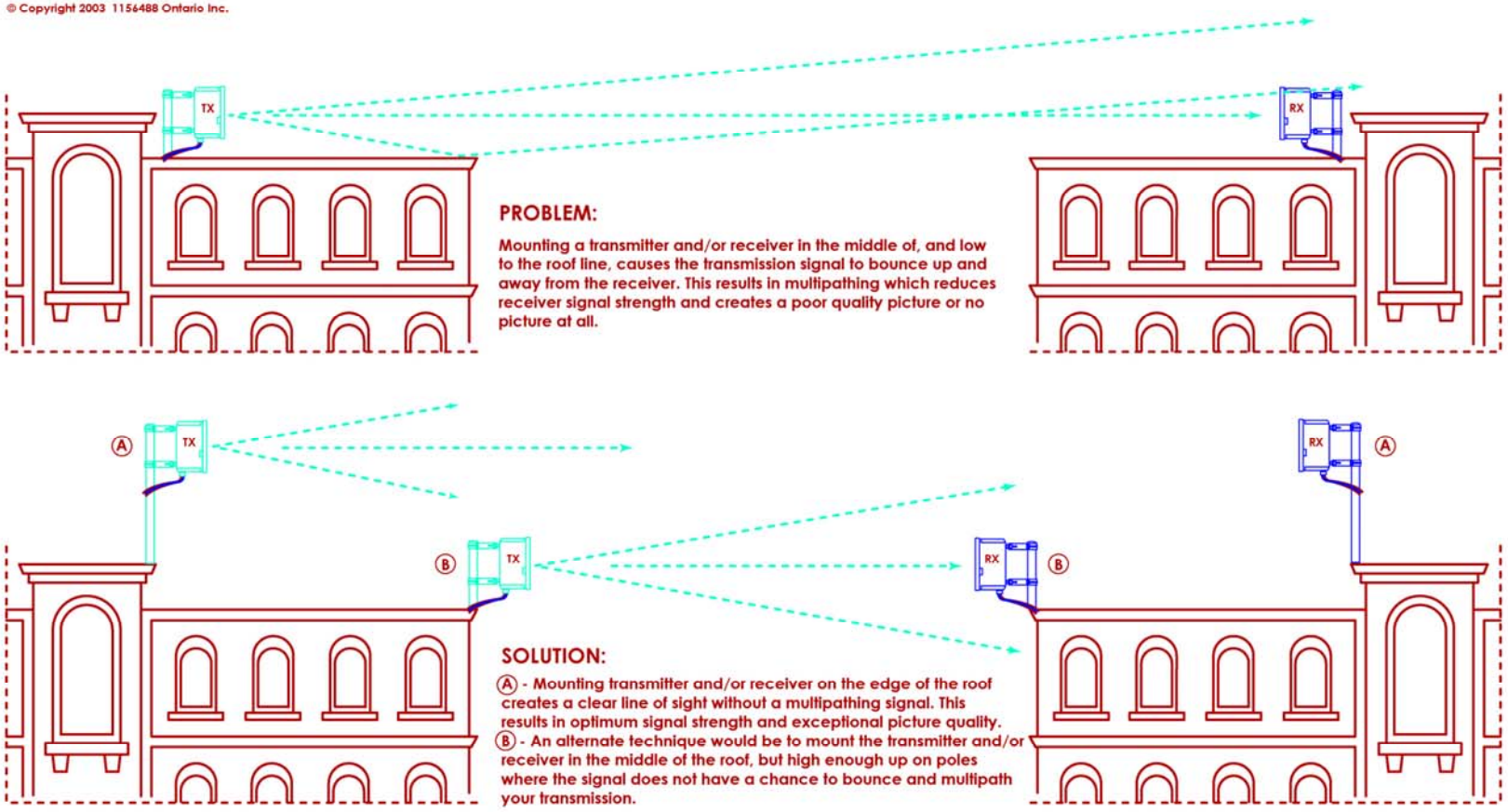

INSTALLATION - LINE OF SIGHT

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VIDEOCOMM TECHNOLOGIES

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Channel Selection

For the wireless video link to work, both the wireless camera and receiver must be set to the same channel.

Use the “Allen-Key” (included) to open the back-plate of the camera housing - as illustrated

Step # 1 - Remove the screw on the left side of the camera

Step # 2 - Loosen the screw on the Right side of the camera
- **DO NOT REMOVE THIS SCREW**

Step # 3 - Gently swing the back camera plate down as shown
- Be careful not to pull on the antenna and power cable

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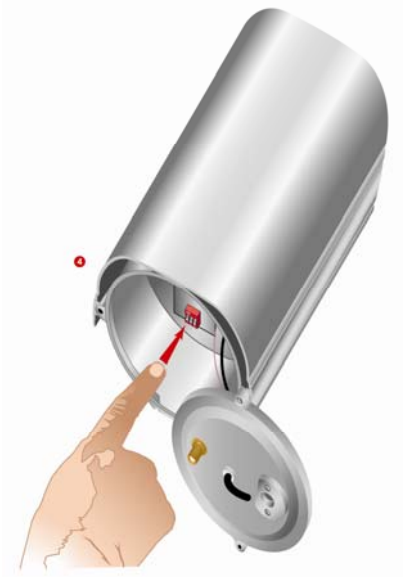


Step # 4 - For the wireless video link to work, both the transmitter and receiver must be set to the same channel.

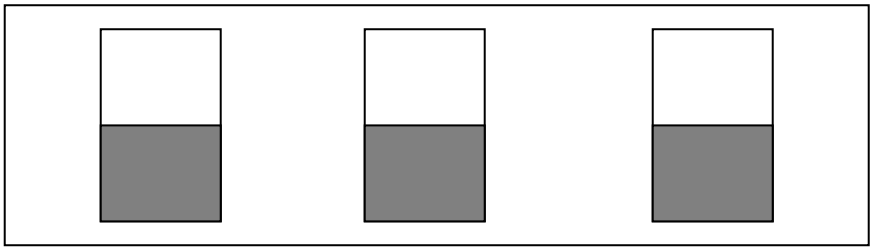
On the inside of the camera you will find the channel select dipswitch.- as illustrated. Choose desired channel and set dip switched accordingly. Ensure both transmitter and receiver have same channel settings.

Step # 5 - Gently swing the camera back plate into position and tighten-attach the screws to secure the back plate

Dip Switches

ON

OFF



	Frequency	PIN 1	PIN 2	PIN 3
Channel # 1	5.733 GHz	OFF	OFF	OFF
Channel # 2	5.752 GHz	ON	OFF	OFF
Channel # 3	5.771 GHz	OFF	ON	OFF
Channel # 4	5.790 GHz	ON	ON	OFF
Channel # 5	5.809 GHz	OFF	OFF	ON
Channel # 6	5.828 GHz	ON	OFF	ON
Channel # 7	5.847 GHz	OFF	ON	ON
Channel # 8	5.866 GHz	ON	ON	ON

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INSTALLATION

Antenna & Power Connection

Antenna Connection
Carefully thread the antenna onto the connector on the back side of the camera. Do Not use a wrench or a tool – **Hand Tighten ONLY**.
For best transmitting pattern – ensure the antenna is pointing "UP"

Power Connection
Only use the power supply included with this camera to ensure proper voltage and amperage.
DO NOT share the power supply with any other device.

ZX-480SR40 - 12 VDC Rated @ 500Ma = Model # PS-1250
ZX-520SR100 – 12 VDC Rated @ 1.25Amp = Model # PS-121A

Universal Mounting Bracket Overview

Connection
Both camera models have the ability to mount in almost any scenario – including wall / ceiling / desktop mounting. We suggest using proper counter-sink plugs when mounting the bracket to any surface and ensure proper support. Once the universal bracket is mounted, almost any camera angle can be achieved.

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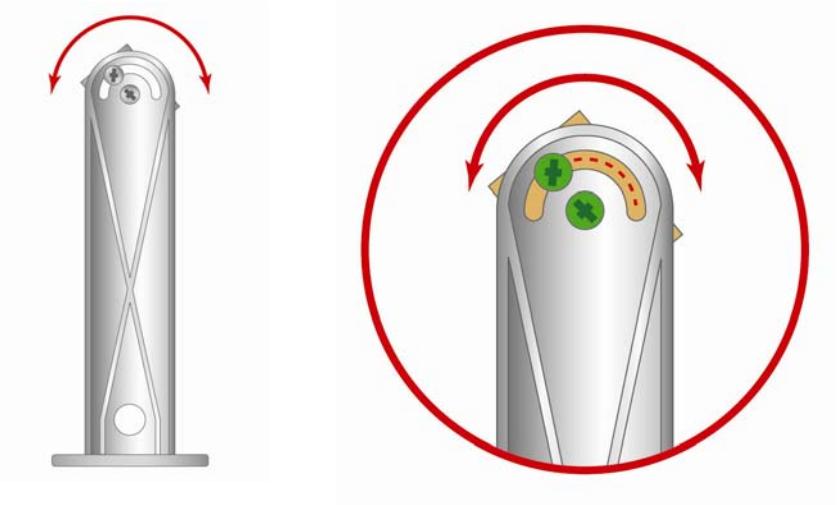
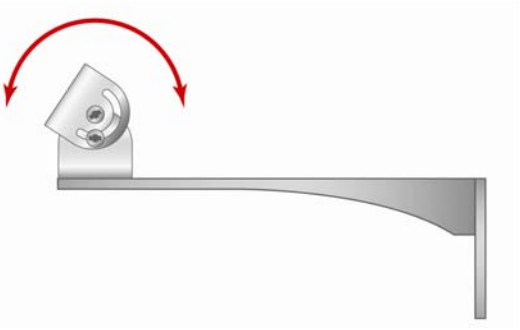
Model # ZX-520SR100 Mounting Bracket Setup

Camera mounting bracket can be positioned for various viewing angles with special pivot and tilt joints.

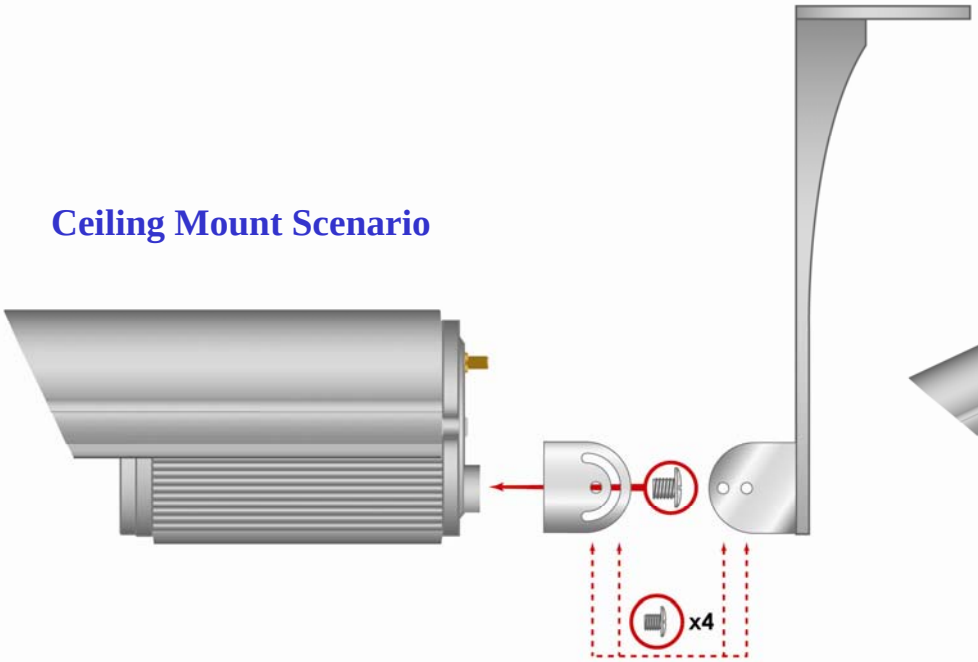
Under-View of Mounting bracket showing Pivoting head mechanism

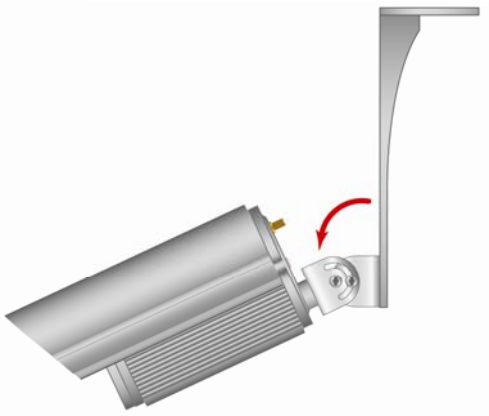


Side-View of Mounting bracket showing Tilting head mechanism



Ceiling Mount Scenario





Adjust as required

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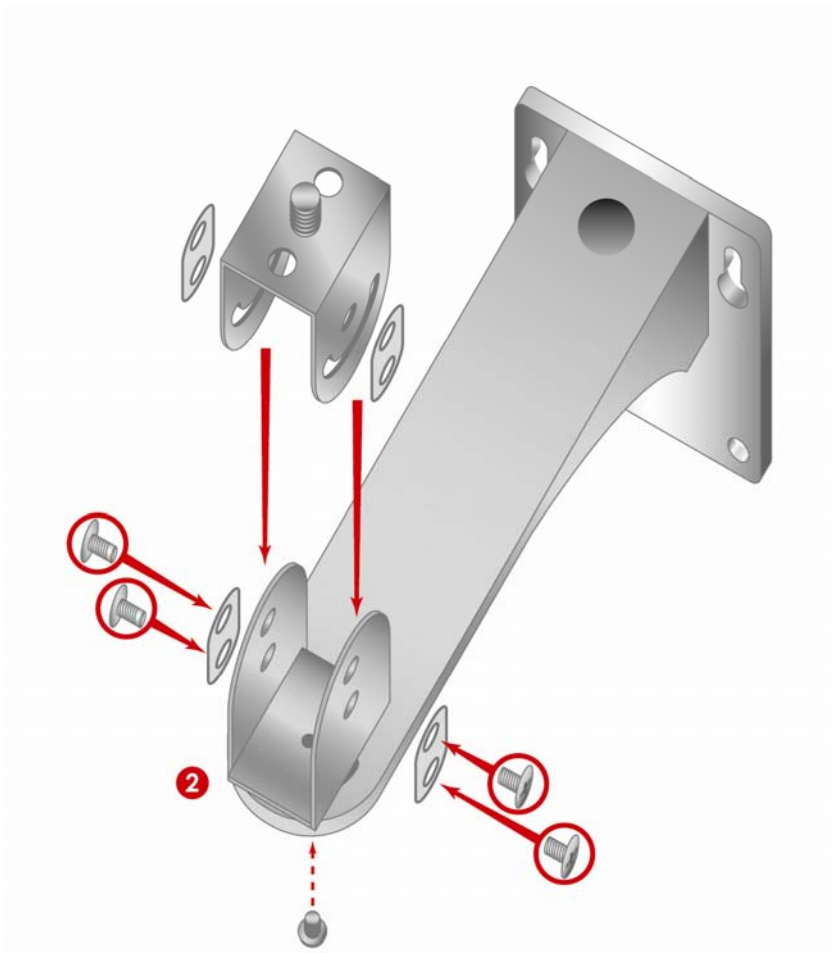
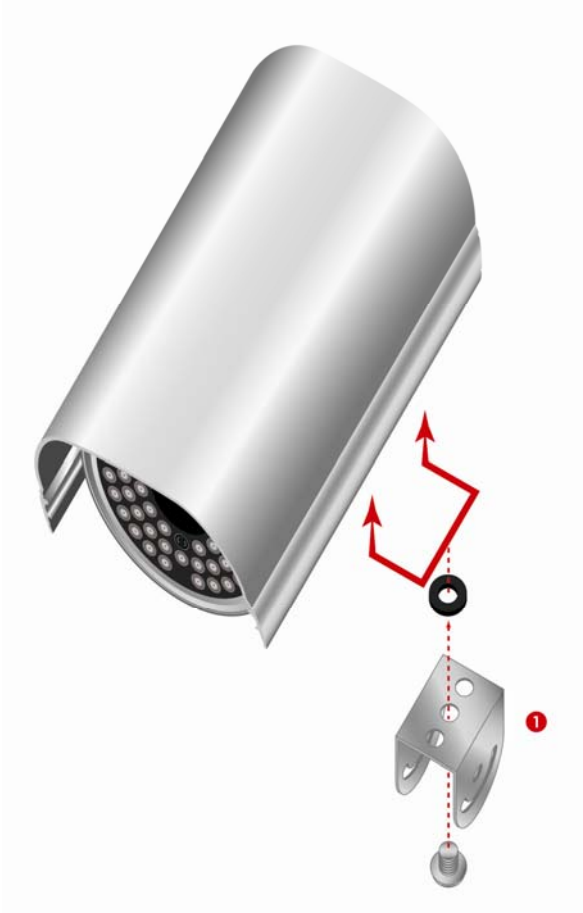
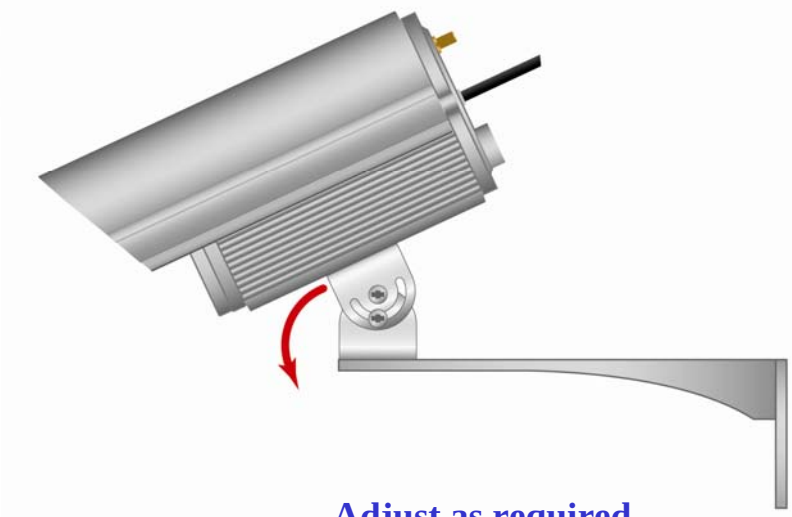
Wall Mount Scenario







Adjust as required

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TIPS & TROUBLE SHOOTING

Snow on the Monitor

If there is snow or noise on your monitor this is a good indication that the receiver is receiving a weak signal.

To correct an image that has a lot of noise (snow) a number of things can be done.

- Move the transmitter and receiver closer together.
- Eliminate obstructions between the transmitter and receiver.
- Add a high gain antenna to the receiver end to increase receive sensitivity.
- Use a higher output power transmitter.

Interference

We strongly recommend that you always conduct a temporary setup of any wireless equipment before systems are permanently mounted. As we are sharing a radio frequency that is considered part of the public band, we do not have any entitlement to that frequency and must accept interference if it exists.

Examples of RF Interference

- Other 5.8GHz video transmitters in your area.
- 5.8GHz wireless data network, LAN or WAN.
- Proximity to some consumer products may be a source of interference. Examples include cordless phones, consumer data transceivers for wireless internet, and Bluetooth devices.

Other Examples of Interference Not Related to Wireless

- Improper line-of-sight, installation or alignment of transmitters and receivers.
- Power source ground loops.
- Incorrect voltages to devices (too high or too low), including transmitters and receivers.
- Sharing power supplies between devices.
- Power source is too close to video cable, low impedance, coax cable kinks, poor video cable terminations, improper and/or lengthy power source cabling.
- Corresponding transmitter and receiver sets are on different channels.

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Possible Solutions if Experiencing Interference

- Change the channel of your transmitter or move your wireless video devices farther away from the source of interference. Transmitters do not have to be beside the camera source and the receivers do not have to be beside the monitoring equipment.

- Before connecting the video feed into the transmitter, use a field monitor to check that you have a good video picture. Similarly for the receiver, check the video output first before connecting to the video feed into the monitor or recorder.

- Depending on the installation, use an existing building as a shield from interfering sources.

- Check power sources and video cable runs for possible ground loops problem, correct voltages, cable kinks, impedance and proper termination. Ensure proper gauge of wire/cable is used for lengthy video and power source installations.

- Whenever possible use separate regulated power supplies for separate devices.

- Mount your equipment at least 15 feet above the ground and increase the height if there are any obstructions like a rooftop, cars in parking lots, metal fence or road traffic. If transmitting over a 10-foot high fence, the transmitter and receiver should be at least 25 feet above the ground (15 feet above the fence).

- Mount the transmitter and receiver on the edge of the roof and ensure it is looking away from the building. This is particularly important if there is a metal roof that tends to deflect signals down.

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OPTIONAL PRODUCTS & ACCESSORIES

5.8GHz All Weather Receivers

Designed with the harshest environments in mind, these robust receivers deliver high resolution, Real-Time video from a rugged IP-67 all-weather enclosure. Best suited in applications where trenching cable may not be possible, convenient or economical.

Optional High Gain Antennas

Designed to connect to your VideoComm Technologies 5.8 GHz device, this series of specialty antennas allows you to match the antenna to your specific application needs. Manufactured from the highest quality materials to ensure superior electrical performance, mechanical durability and longevity. Meet your application demands by choosing an antenna to improve and increase your signal strength and transmission range.

Solar Kits

A Solar Power Systems is a stand-alone solar photovoltaic power source designed to supply a high reliability source of electricity for video surveillance systems, CCTV products, perimeter laser's, lights or any low voltage electronic device. Standard 12 volts DC output with optional module for high-efficiency conversion to 24 volts AC, 50 or 60 HZ.

The power system collect solar energy and store it in a battery(s). At night, the system supplies the battery with the stored energy to continue running the electrical devices. The solar generating panel and battery is computer analyzed and sized to provide highly reliable operation, even in the event of many days of inclement weather.

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SPECIFICATIONS

Operating Frequency	5.725GHz – 5.875GHz
Available Channels	8 User Selectable Channels
Radiated Power	50mV/m @ 3m
Antenna Type	3dB Omni Directional Rubber Duck – SMA-Male
Camera Antenna Connector	SMA-Female
Video Format	NTSC
Modulation	FM - Frequency Modulation
Video Connector	BNC Female @ 75 Ohms 1 Volt P – P
Camera Type	1/3” Color Day-Night SONY CCD
Resolution	520 Lines
Camera Lens	8mm @ f2.0
IR Range	Up to 100’ +
Enclosure	Aluminum – Rated IP-66
Temperature Range	-30 to +170 degrees Fahrenheit
Operating Voltage	12 VDC Polarity Protected
Current Consumption	600mA @ 12VDC - IR on
Weight	1000g or 2.2lbs.
FCC / IC / CE Approved	Yes
Warranty	One Year

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WARRANTY INFORMATION/ TERMS & CONDITIONS

VideoComm Technologies, herein referred to as "VCT."

LIMITED WARRANTY

VCT hereby warrants, subject to the conditions here in below, that should this product become defective by reason of improper workmanship or material defect during the specified warranty period, VCT will repair the same, effecting all necessary parts without charge for either parts or labor, or replace the unit at VCT option.
Labor: ONE (1) Year from the date of original purchase from authorized Re-seller. TWO (2) Years for Antennas only.
Parts: ONE (1) Year from the date of original purchase from authorized Re-seller. TWO (2) Years for Antennas only.

Void Warranty

Purchaser warranty will be void and purchaser waves any rights to make warranty claim if product has been opened, altered or modified, repaired or serviced by anyone, other then the service facilities authorized by VCT to render such services. Further, the seal/serial number on the unit must not have been altered or removed. The unit must not have been subject to accident, misuse, abuse or operated contrary to the instructions provided. The opinion of VCT with respect to this matter shall be final. This warranty does not include and is not extended to broken and damaged accessories, batteries and exposed antennas and to parts wearing out due to normal wear and tear.

Proper Delivery:

Returned products will not be accepted for warranty repair unless accompanied with a valid Return Merchandise Authorization (**RMA**) number issued by VCT. RMA numbers issued by VCT are valid for 15 days. Shipments received after 15 days will be refused. The unit must be shipped, freight prepaid or delivered to the VCT Service facility, in either its original package or similar package, affording an equal degree of protection and with instructions indicating the location within Canada or the United States to which the unit will be returned. The repaired unit will be returned to the customer freight prepaid unless the warranty claim is deemed void or invalid. All accessories included with the unit must be listed individually on the packing slip for the shipping documentation. VCT will not accept any liability, for loss or damage to such accessories if they are not listed.

Proof of Purchase Date:

This warranty applies and commences to VCT products, from the original date of purchase from an Authorized Re-seller. Proof of purchase (i.e.: photocopy of invoice), must be included with product when submitting for warranty repair.

Warranty Limitations:

This warranty does not cover maintenance or check-ups, if required. This warranty gives you specific legal rights and you may also have other rights, which vary from state/province to state/province. Some states/provinces do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, therefore the above exclusions or limitations may not apply to you. VCT is not responsible or liable for indirect, special, incidental or consequential damages arising out of or in connection with, the use or performance of the product or other damages with respect to loss of property, loss of revenues or profit, or cost of removal, installation or reinstallation.

PRODUCT RETURNS

30 Day Product Return Policy ** If you are not satisfied with a product, you may return it to VCT within 30 days from original date of shipment within the following conditions:

- Original shipping charges are not refundable unless deemed that VCT shipped incorrect item(s), incorrect quantity (ies) or original manufacturers defective product (subject to VCT validation).
- Returned products will not be accepted unless accompanied with a valid Return Merchandise Authorization number (RMA).
- RMA numbers issued by VCT are valid for 15 days. Shipments received after 15 days will be refused.
- Returns must include a copy of original invoice, the completed VCT packing slip, and a detailed statement of reason for return.
- Customer is responsible for all freight charges, duties and taxes, if applicable. Product must be properly packaged and shipped, prepaid to VCT in its original packaging, or similar packaging that offers an equal degree of protection. VCT will charge the full replacement cost for any missing components or parts. VCT is not responsible for lost or damaged merchandise. We strongly recommend insuring products for return shipping.
- Return claims are void if manufacturer's seal is broken and/or products are altered or modified, subjected to an accident, improper handling, improper installation, misuse and abuse or operated contrary to the operating instructions. Products returned that are not in "re-saleable" condition will be returned to customer at their expense.
- Discontinued items, special or custom-made equipment items (items not carried as stock even though they may appear on price lists) may not be returned. Returned products will be evaluated at the original purchase price and not at any subsequent price increase or decrease.

****** Subject to the conditions stated above, the following re-stocking fees will apply to products returned for credit/refund.
VCT reserves the right to determine the validity of the product returned and / or refuse to accept product for credit.
0 % Re-Stocking Fee (less original shipping charges): If product is returned within 30 days from original VCT ship date.
25% Re-Stocking Fee (less original shipping charges): If product is returned within 60 days from original VCT ship date.
50% Re-Stocking Fee (less original shipping charges): If product is returned within 90 days from original VCT ship date.
100% Re-Stocking Fee **(0% credit) : If product is returned after 90 days from original VCT ship date.**

DISCLAIMER

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